



Europäisches Patentamt
European Patent Office
Office européen des brevets



Publication number: **0 442 671 A3**

12

EUROPEAN PATENT APPLICATION

21 Application number: **91301053.4**

51 Int. Cl.⁵: **A61K 9/52, A61K 37/02,
A61K 37/24, B01J 13/02**

22 Date of filing: **11.02.91**

30 Priority: **13.02.90 JP 33133/90**

43 Date of publication of application:
21.08.91 Bulletin 91/34

84 Designated Contracting States:
AT BE CH DE DK ES FR GB GR IT LI LU NL SE

88 Date of deferred publication of search report:
02.09.92 Bulletin 92/36

71 Applicant: **TAKEDA CHEMICAL INDUSTRIES,
LTD.
1-1, Doshomachi 4-chome
Chuo-ku, OSAKA (JP)**

72 Inventor: **Okada, Hiroaki
11-704, 44 Yamadaminami
Suita, Osaka 565 (JP)
Inventor: Inoue, Yayoi
4-7, Katsura-Kamimamedacho, Nishikyo-ku
Kyoto 615 (JP)
Inventor: Ogawa, Yasuaki, 77-42, Koaza-tanita
Aza-ohyamazaki, Ohyamazaki-cho
Otokuni-gun, Kyoto 618 (JP)**

74 Representative: **Lewin, John Harvey et al
Elkington and Fife Prospect House 8
Pembroke Road
Sevenoaks, Kent TN13 1XR (GB)**

54 **Prolonged release microcapsules.**

57 This invention provides a microcapsule designed for zero order release of a physiologically active polypeptide over a period of at least two months, which is produced by preparing a water-in-oil emulsion comprising an inner aqueous layer containing about 20 to 70% (w/w) of said polypeptide and an oil layer containing a copolymer or homopolymer having a weight-average molecular weight of 7,000 to 30,000, the molar composition ratio of lactic acid/glycolic acid being 80/20 to 100/0, subjecting said water-in oil emulsion to microencapsulation.

EP 0 442 671 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 91 30 1053

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. CL.5)
X	EP-A-0 256 726 (TAKEDA CHEMICAL INDUSTRIES LTD.) * page 3, line 31 - page 4, line 42 * * page 5, line 5 - line 21; claims 1-24 * ---	1-3, 6-15, 18-23	A61K9/52 A61K37/02 A61K37/24 B01J13/02
X	EP-A-0 350 246 (TAKEDA CHEMICAL INDUSTRIES LTD.) * page 3, line 42 - page 4, line 25 * * page 4, line 30 - page 5, line 10; claims 1-14 * ---	1-4, 6-10, 12-16, 18-22	
X	EP-A-0 145 240 (TAKEDA CHEMICAL INDUSTRIES LTD.) * page 2, line 24 - page 4, line 28 * * page 7, line 23 - page 10, line 8 * * page 14, line 9 - line 27; claims 1-10 * D & JP-A-60 100 516 (...) ---	1-10, 12-22	
X, D	EP-A-0 190 833 (TAKEDA CHEMICAL INDUSTRIES LTD.) * page 2, line 32 - page 5, line 5 * * page 7, line 10 - line 21 * * page 9, line 22 - page 10, line 6 * * page 10, line 26 - page 12, line 4; claims 1-10 * ---	1-23	TECHNICAL FIELDS SEARCHED (Int. CL.5) A61K B01J
A	EP-A-0 202 065 (TAKEDA CHEMICAL INDUSTRIES ET AL.) * page 4, line 2 - line 22 * * page 7, line 6 - line 27; claims 1-15 * ---	1-23	
A, D	EP-A-0 052 510 (SYNTEX INC.) * page 14, line 11 - line 21; claims 1-10 * -----	1-23	
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 25 JUNE 1992	Examiner SIATOU E.
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document</p>			

EPO FORM 150 (01.91) (P0001)